

**WHAT IS CLAIMED IS:**

1. A method for de-channelizing data in a W-CDMA system, comprising:
  - detecting an OVSF code used as a channelization code;
  - demodulating data multiplexed in the OVSF code using an FHT; and
  - mapping an order of the demodulated data to correspond the data to the OVSF code.
2. The method of claim 1, wherein the detecting step includes detecting a spreading factor (SF) value of the OVSF code.
3. The method of claim 1, wherein the mapping step includes mapping an output FHT value using a mapping table storing the order of the OVSF code.
4. The method of claim 3, wherein the mapping table stores a mapping number sequence for each SF of the OVSF code.
5. The method of claim 1, wherein the mapping step comprises:
  - extracting odd numbered elements from the mapping number sequence of the OVSF code for an uppermost SF and generating a new mapping number sequence corresponding to the SF of the OVSF; and
  - applying an output value of the FHT in an order of the new mapping number sequence.

6. The method of claim 5, wherein the uppermost SF is 256 (2<sup>8</sup>).

7. The method of claim 1, wherein the mapping step comprises:

directly generating a mapping number sequence for SF(2<sup>m</sup>) of the OVSF code; and  
applying the generated mapping number sequence to the output value of FHT.

8. The method of claim 7, wherein the mapping number sequence is directly generated based on a mathematical expression which calculates each element of a mapping number sequence  $M=\{m_1, m_2, m_3, \dots, m_{SF}\}$  for SF(2<sup>m</sup>), said mathematical expression including:  $m_k = 1 + \sum_{i=0}^{m-1} k_i \cdot 2^{m-1-i}$ , where  $k=1, 2, \dots, SF$ .

9. The method of claim 8, wherein  $k_i$  is a binary expression value for  $k-1$ .

10. A method for de-channelizing detain of a W-CDMA system, comprising:  
detecting an SF value of an OVSF code which has multiplexed data;  
demodulating the data using an FHT;  
extracting a mapping number sequence corresponding to the SF value from a mapping table; and  
arranging the demodulated data in an order of the mapping number sequence.

11. The method of claim 10, wherein the mapping table stores mapping number sequences for every SF.

12. A de-channelization method for a W-CDMA system, comprising:

detecting an SF value ( $SF = 2^m$ ) of an OVSF code which has multiplexed data;

demodulating the data using FHT;

extracting odd numbered elements from the mapping number sequence of the OVSF code for uppermost SFs ( $256=2^8$ ) and generating a mapping number sequence corresponding to the SF value ( $SF=2^m$ ); and

arranging each demodulated data in an order of the generated mapping number sequence.

13. The method of claim 12, wherein the odd numbered element is an  $\sum_{k=0}^{SF-1} (1 + k \bullet 2^{8-m})$  element of a mapping number sequence for the uppermost SFs.

14. A de-channelization method for a W-CDMA system, comprising:

detecting an  $SF(2^m)$  value of an OVSF code which has multiplexed data;

demodulating the data using a FHT;

directly generating a mapping number sequence ( $M = \{m_1, m_2, m_3, \dots, m_{SF}\}$ ) for the  $SF(2^m)$  value of the OVSF code; and

arranging each demodulated data in an order of the generated mapping number sequence.

15. The method of claim 14, wherein a mathematical expression used to calculate each element of the mapping number sequence is

$$m_k = 1 + \sum_{i=0}^{m-1} k_i \cdot 2^{m-1-i}, \text{ wherein } k = 1, 2, \dots, SF.$$

16. The method of claim 15, wherein  $k_i$  is a binary expression value for  $k-1$ .